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CONTENTS

The Problem of Philosophy: HAROLD CHAPMAN BROWN 281

Strict Implication—An Emendation: C. I. LEWIS 300

Reviews and Abstracts of Literature:

Laski's Authority in the Modern State: STERLING D. SPERO 302

Yoakum and Yerkes's Army Mental Tests: F. L. WELLS 304

Journals and New Books 306

Notes and News 307

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PSYCHOLOGY AND SCIENTIFIC METHODS

THE PROBLEM OF PHILOSOPHY

ANY man who is more than ordinarily reflective is likely to be called a philosopher. If he is to give distinction to the appellation, whatever special abilities he may manifest, he will have the capacity to relate the experiences of his life and of the lives of others to principles, for him, at least, fundamental. Where these principles come from is not always evident. They may be adaptations of the dogmas of religion; they may be personal interpretations of the basic laws of science; or they may be intuitions that arise somehow in the course of observation and study. In any case they are there and require attention. For one who is interested in human behavior, there is perhaps nothing that is as important to know with respect to an individual or a social group as the set of fundamental principles from which its thinking starts and to which it returns; the basis of its judgments in politics, art, morality and religion. Without such knowledge the conduct of any of the larger enterprises of life can not be understood, and without deference to such knowledge conviction can never be produced on any matter of importance. Facts may be important, but the background to which they are assimilated is equally so.

A good background is not easy to attain. Sets of principles have a most pernicious trick of failing to be consistent, of requiring elaboration or supplementation, and above all of demanding substantiation. The game of playing with them may become very fascinating. The result is that many a young philosopher loses himself in the game and, starting from a very meager basis of experience and knowledge, expends his whole energy in trying to get his materials, however scant they may be, into shape. His contact with life may be slight, and if he ever succeeds in getting back to the world men live in, the facts of life show him infinite puzzles. To be sure, he brings with him a system, the product of intense mental labor. But he also brings narrowed vision. Not only does he fail to understand what does not fall within his scheme but he actually does not see the rest of life. Vision is not the mere act of looking but involves prepa-

ration, as every one knows who has looked through a telescope, a microscope, or been present at a dissection in a biological laboratory. Such a philosopher will see nothing that does not fall within his scheme of things and deny whatever threatens to wreck it. Like the spider, he may continue to spin his web but the materials are drawn from his own entrails, and the result is likely to concern no one but himself, unless some unwary fly is lured into the mesh. It is almost impossible to give up a system when attained, the labor of attainment has been so great, and construction goes on for the fun of creation. Hence there are voices that cry, philosophy must not be a system.

But it is hasty to conclude that philosophic systems are undesirable or that philosophizing is a narrowing activity. If a philosophy is something to live by, and living requires coherent purposive direction, it is implicit that philosophy must be systematic. It is a limitation, but only in the sense that all organization of ideas or materials is limitation. The humanitarian is limited in that he can not be a crook, and the paper mill in that it can not turn out submarines. This sort of limitation is the essential condition of achievement. But a system need not become rigid and incapable of growth or improvement. Like other works of man a philosophy can live only amongst those who want it to live. Changes in scientific knowledge, social conditions, or human aspirations will render it obsolete unless it contains within itself some principle making it capable of adaptation to them. In general, the more rigid the system, unless its factual basis is exceptionally rich and fortunately chosen, the narrower the circle of those to whom it will appeal and the shorter its productive life.

The anti-metaphysical philosophers have felt the force of these objections and exaggerated them into a wholesale protest against metaphysics, or the systems of fundamental principles. They have striven to safeguard themselves, not by avoiding principles, but by adopting them from the sciences. Their selection, however, is often rather casual and the result is a philosophical fragment. Sometimes, despite themselves, their materials crystallize into a system of which the only claim to be anti-metaphysical is that it is opposed to some other system with which they have taken issue. It is best, then, to acknowledge the fundamental human need for a systematic integration of ideas but at the same time to realize that the order of discovery is not the order of exposition, that principles can not be grasped *a priori* to the facts that they must interpret. In other words, the best situation is one in which the background for our judgments remains somewhat plastic while the details of its implications are being

worked out and tested by life. For the thinker, his metaphysics can not be first established and then his programme of life unfolded, but the two grow together into an integrated coherent whole. His philosophy is then inductively and not deductively established. Though it may lose thereby in archetonic perfection, there is more than adequate compensation in its consequent vitality. The idea of system may be always present though the actual system lacks the finality of an absolutism.

To many men the above remarks will sound rather silly. They will say, a philosopher is after the truth and if he can attain it there will be no more talk of system or not system; there will be no more philosophic disagreements, but a philosophy everlasting. It is not a choice but a necessity that lies before us. Of course, they will add, from the very nature of the materials, philosophic truth is very difficult to obtain. It may have to wait upon the perfection of the sciences and philosophy can not look forward to the utopian state in an immediate future. The history of philosophy is a long record of errors but—and this is the egoism of every new generation—we are at last on the right track and shall end nearer the goal than our forebears.

Others will object on the grounds that the present day is replete with diverse philosophies. They read the situation as hopeless. If philosophy can not find the truth, is it not better to give up speculating and content ourselves with the tasks of daily life? When the true answer remains forever hidden why ask of the whence and the whither? Philosophy to be worth while must have the truth, but since it can not get it, it is better to leave it and its problems entirely alone. If a man must have some guide to avoid accepting life with stultified intelligence on the level of the vigorous play of the lowest and most animal impulses of human nature, there are always the religious mystics. Here, though the disciple may remain in ignorance, his cravings may be in part satisfied by a conviction that to the elite of the sect all things have been made clear. We are so used to the authority of experts, our doctors, our lawyers, our mechanicians, that it is easy to feel that we can hire our philosopher or our clergyman to put us straight also. Where the truth can not be found, at least by the layman, to affiliate with a prosperous sect seems an easy refuge. If its master knows it all, all is well.

Both of these objections rest upon a misapprehension of the real nature and mission of philosophy. The latter fails to note that philosophy is a sort of mental hygiene. To leave it in the hands of a philosopher is like rejoicing in the strength of a Sandow while we ourselves waste away of inactivity, or vaunting our cleanliness be-

cause our doctor takes daily baths. An attitude toward life is not a thing that can be borrowed from some one else, but must be individually achieved by integrating impulses and desires with knowledge of fact into a consistent programme of action. It is essentially an acquisition of healthy-mindedness, and most men are afflicted with the ailment for which philosophizing is the remedy. Philosophizing is a personal need and, like proper exercise, is an individual matter dependent upon mode of life, environmental conditions and inner state. The man who has not a philosophy lacks a coherent character and through mental conflicts is wasting in futile frictions those energies that ought to be expended in full freedom of living. The philosopher by occupation, like the physician, can not effect a cure by the extent of his own knowledge, but only by what he can stimulate his patient to do for himself. As a man may become well by his reaction to those things with which a skilful physician brings him in contact, so he may be aided to find himself through reacting to the reflections of a philosopher.

It is nevertheless true that there are right and wrong ways to philosophize. The universe is not perfectly fluid but confronts us with facts that have to be taken into consideration. Human nature also, although it may present wide diversities, has its limitations. No philosophy can be wholly sound that substitutes either dreams or illusions for these facts. There is no healthy-mindedness in the dreams of the Lotus Eaters, and no intrinsic value in fool's gold. But it does not follow that there is a single authoritative philosophy which this or any other age can discover that will be authoritative for all time. Philosophy is too close to life to admit of such schematization. Let us suppose that science has realized its ideal and that every phenomenon, psychological, sociological, and physical, can be subsumed under its specific laws. It would follow that every situation, with or without human participation in it, could be understood. The causes that brought it about and the consequences that must spring from it could be grasped. In particular instances we could foretell whether individual men would seek or avoid these anticipated consequences. We should know what ideals they held and how they came to hold them. But we should also know that they would not hold the same ideals or seek and avoid the same things. They would have different philosophies. Only if by some system of super-eugenics and super-education all human organisms could become exactly alike and be placed in identical environments would the same reactions take place and a single philosophy hold. Nature nowhere exhibits such identities of complex forms, and there is no ground for believing that men will ever seek such unanimity, even if they should come to have sufficient knowledge to attain it.

But even here our principle of the limitation of possible variations holds. To assert that there is no possible absolute and universal philosophy is not to assert that every variant of the philosophic form is a good thing. Variation within species seems to be the necessary condition of biological evolution, but some variations are monsters and accomplish nothing. So with philosophies. Those that arise from knowledge of facts have a claim to respectful hearing and their variety may be a healthful stimulus productive of new ideas. But those built on fictions and confusions take from man his capacity for the intelligent conduct of life, a capacity the extent of which is his one claim to be considered as distinct from the brutes.

Herein lies a fundamental difference, too little understood, between science and philosophy. Philosophy starts from the truths with which science ends, but its purpose is not merely to cite or to systematize. Scientific truths are instruments which transfer the control of our action from present facts to anticipated consequences of action. The perspective which philosophy introduces should serve to integrate these responses into a coherent life, a condition perhaps best described as healthy-mindedness. For science the fundamental category is description, and its measure of success the accuracy and extent of the predictions it makes possible. Where the scientist seeks discoveries, the philosopher makes interpretations. The former aims to make the control of nature possible and the latter to point out desirable directions in which this capacity to control may be directed. Philosophy can not exist without science, and science loses its significance without philosophy. In the strict sense, then, there are no philosophic truths, but only scientific truths. When these are utilized to suggest or clarify a reasonable and desirable mode of directing human life they constitute a philosophy. If philosophy is called true, the meaning of truth undergoes a transformation. While scientific truth is tested by verified predictions, philosophic truths stand or fall with the presence or absence of satisfaction resulting from a life lived in harmony with them.

It is worth while to note the procedure of science a little more concretely. We have said that the fundamental category of science is description, but all description is not science. Scientific description involves selection. If an intelligible world is to arise from the "blooming, buzzing confusion" of infantile experience, it must be that some buzzes can be singled out from the rest, identified, and named. If the selection is made in the proper way for scientific purposes experience demonstrates that the character and occurrence of other buzzes can be predicted from them. It is not sufficient that science shall discriminate objects but it must make its discrimina-

tions in such a way that they can serve as a basis for predictions. We grasp our world by samples, but samples are worthless unless indicative of the character of that from which they are drawn. It is not mere facts but significant facts that must be formulated descriptively as a basis of science.

The possibility of science lies objectively in a certain character of reality that makes it possible to analyze the world into entities that may be treated as discrete. Nevertheless all talk about their ultimate independence is an abstract fiction, since they are never found except in conditions of interdependence with the rest of reality. We conceive reality as some sort of a complexly differentiated whole, but as no one has as yet been able to draw any momentous synthetic conclusion about this whole, it remains for thought a totality rather than an unity, and pluralistic philosophies present the best empirical credentials.

From the study of the parts of complex objects, such as the bark, wood, sap, leaves and branches of a tree, we are able to draw synthetic conclusions as to the fundamental character and results of the tree's growth; we are tempted to apply the same type of procedure to a synthetic conception of the universe. Some have even gone so far as to make such statements the fundamental aim of philosophy. But, if the task were possible, it would still fall within the province of science, and at present our analysis is far too incomplete and our detailed studies far too meager to hope for success. We should have as materials only somewhat vague and general indications from the astronomer, geologist and biologist, too incomplete to enable a conception of the universe to take a place in any way comparable with that of the growth of a tree. The nearest approach to such an idea is expressed by evolution, but evolution, strictly understood, means nothing more than descent tracing and is but a way of confirming the same sort of unity of the whole through time that the interdependence of contemporaneous entities gives for space, that is, the possibility of studying a cross-section of reality in another dimension.

Because man has achieved a measure of success in science and is able to make predictions with some degree of accuracy, he has an instrument by which he can maintain a certain degree of mastery over his future. Futures that he does not like he often forefends by introducing or removing factors of the situation which science shows will result in them. Desired anticipations are often obtained by producing the conditions from which they will arise. But, be it noted, science never says *what* he must seek or avoid. The scientific function has been fulfilled when the capacity to predict results has

been attained. Strictly speaking, there is no reason why a child should not eat a gallon of ice cream at a sitting or a man leap from a thousand-foot cliff. Science can merely say to the child, you will be ill; and to the man, you will die. If the child replies, Why should I not be sick? or the man, Why should I not die? science can only go on to state the further consequences and conditions of sickness and death. It is safe to predict that in these instances an avoiding response would be immediately given to these consequences, if they are understood, but that statement itself is merely a prediction based on observations of human behavior.

There remains, then, an important class of questions that science does not directly answer. Desires are the mainsprings of human action and these questions concern the integration of these desires into a coherent group that can furnish a background for healthy and effective living. It is necessary first to penetrate beneath the more obvious desires. These are usually enumerated in terms of immediate satisfactions such as health, economic independence, or more generally, happiness. Philosophies have been built upon them, but such philosophies are peculiarly unsatisfying. It is an interesting and by no means easy task to find out what it is that men actually desire, for ends are not as simple as the language in which we express them. Thus the pleasures and luxury of wealth may inspire the imagination, but its attainment may carry with it care, worry, ill health, separation from old friends, and a hundred subsidiary conditions that in unhappiness more than offset positive gains. Above all, in attaining ends, human nature may become so transformed that the end is by no means the all-sufficient satisfier that it appeared to be at the start. But these things will vary with individual cases. The very phrase "what men desire" is itself a confusing generality, for there is no one thing that all men are bound to desire from their nature as men, and the many desires of an individual man can hardly be summed up under the simple phrase "a man's desire."

The comprehensive problem of philosophy is to find integrations of these many individual human impulses that shall be compatible with the facts of reality that are beyond our control. Such integrations express themselves as ideals. The entire structure is founded on science, for we can not tell what may be unless we have scientific understanding of what it is. A sufficiently developed science can tell us what ideals are practicable and can elaborate the results of their realization. It may even foresee how individual men will react to alternative ideals, to seek or avoid them. It is essential for a philosopher to choose and to justify his choice. Science may study him and his choice, but the choosing is not a part of science. In

other words, while the fundamental category of science is description, the fundamental category of philosophy is action. Scientific results are authoritative and final truths, where science has been successful. They make possible verifiable predictions. Philosophic results are inspirational and win approvals. But neither can stand without the other, for while, in the last analysis, philosophically established ideals are the ultimate justifications for the directions in which the labor of scientific research is expended, science is the cornerstone upon which philosophy must build if its ideals are to have rational appeal, that is, if they are not to lead merely to disillusionment.

The first problem for any philosophy is a careful consideration of the structure and nature of the world we live in and of our relation to that world. While there is a certain plasticity about human nature and the physical world, of which we take advantage in adapting environment to our needs and ourselves to inevitable environments, that plasticity is not without its limitations. To neglect these limitations is to indulge in mere utopian speculation. The foundations of philosophy are those established principles of science which tell us most about the potentialities of the world and of man. Realistic and empirical philosophies accept them, idealistic philosophies seek to transcend them, and mystical philosophies deny their validity. As a result mysticisms have had to take refuge in vague faculties of intuition, the very existence of which, in the mystic's sense, is in question, and ontological idealism has never demonstrated the possibilities of transcendence. At best, the result is a sort of poetry to be valued from its emotional appeal only. To the man who would know where he is going, the empirical and realistic type of procedure is the only one our present knowledge can justify.

The orientation of a philosopher with respect to scientific principles is what really constitutes his metaphysics. He can make no factual discoveries that science has not made. He can not criticize, correct or transform knowledge that has been worked out in close relation to data and has meaning only in so far as it furnishes a verifiable interpretation of that data. He differs from the student of applied science in that while the latter is seeking immediate applications of scientific principles to the production of specific things or conditions that are desired, the former seeks light as to the general conditions under which greater congeniality or mutual fitness can be attained in human relations and the relations of man to his environment. While the philosopher might seek to sanction craftsmanship as the ideal of productivity, or economic gain as the basis of industrialism, the applied scientist seeks the means of attaining the

accepted end but not the sanctions that justify that end. Both utilize scientific discoveries, the one to exhibit an end as possible and desirable, the other to perfect the means for attaining it.

While philosophy consists in the act of accepting ends, its intellectual elaboration lies in the construction and evaluation of these ends. Consider its various branches as examples. If we enter the field of logic, the first question that confronts the philosopher is what should we seek to do with our capacity for thinking. The blanket answer, arrive at knowledge of the truth, requires definition. We must understand the nature of thinking and the ends it is possible for it to attain. This knowledge is scientific. We learn that thinking is not an invented process, but a name given to certain moments selected from the whole process of response. The selection may vary according to the ends sought. Thus processes used to reinforce an emotional satisfaction such as may be obtained from a religious belief may be called thinking. This involves concentration on facts of a certain sort and the concatenation of them in a particular way. The history of philosophy from the early Christian era is replete with such efforts. As they have a specific aim, they require a special ordering of mental process, and the result is a philosophic technique that attained its highest perfection in scholastic logic. The mental functions that are here integrated and designated as thinking are a special selection that determines its own method and definition of truth.

The Greeks had little power to reconstruct nature, hence felt the need to accept things as they are. As a result nature for them was resolved into essences and their logic was one of categories and of deduction. The striving for truth became the effort to separate things by kinds and develop relations of genus and species. But the modern man is inspired by a heightened consciousness of his capacity to master nature, and perhaps himself. He feels himself captain of his soul and master of his world. Consequently, for him those mental processes constitute the essence of thinking that make for increased success in prediction. He extends his mind by laboratories and apparatus, thus attaining a new logic and new conception of truth.

The question as to which logic is correct can not be categorically answered, for the question itself is obscure. Each is successful in its own field. Passive acceptance of what is, and resignation to contemplation, is generally repulsive to our contemporaries. Nor do they care to wait for the will of God to realize itself in the world or to cultivate the aloofness of the hermit. To them life is an adventure and one for which the responsibility must rest on their own

shoulders. Their logic is accordingly the logic of foresight, and philosophy easily takes the form of an experimentalism. What is needed is that experiments should have intelligent direction. There is a wide difference between those who experiment for mere experiment's sake, the vagabond adventurers of life, and those reflective enough to utilize experimentation constructively. This change, however, merely indicates a shifting of interest and of ideals, but in no way demonstrates an inadequacy of other types of logic for the ends for which they were formulated.

The first act of a philosopher, then, in considering the fields of art, morality or religion is to determine the ends which he demands that these achievements severally fulfil. Since the end must be possible, it can only be formulated on the basis of scientific knowledge as to rational expectation; and since the end must be desirable, it must be formulated with respect to the actualities and potentialities of human nature. These also must be learned by science. But the fiat is not learned but given as a reaction to an anticipation, and since human nature is diverse, the fiat will not always be the same. The conceptions that bring about the greatest integrations of personality and adjustment to the world, for men in one stage of development and under certain environmental conditions, will be wholly inadequate in another stage and under different conditions. Hence philosophies will continually arise and pass away. They are not necessarily demonstrated false but become unfruitful and so uninteresting. The occurrence of technical mistakes in great philosophic systems are insignificant factors in destroying them as compared with new social or environmental conditions such as are encompassed by migration, political revolution, military conquest and scientific discovery.

The history of philosophy has, in consequence of the nature of philosophy, a very different value from the history of science. Scientific principles are either correct, in which case they are incorporated in contemporary science, or incorrect, in which case they are left behind as mistakes. The mistakes in science may be instructive from the point of view of the study of method but they have little general interest, though the kind of problems which scientists have set before themselves are interesting as revealing diverse interests by which men have been inspired. Philosophies, on the other hand, are nothing but revelations of human ideals, and are always in so far contemporary, for although the type of aspirations held by the majority of men in any age may change, almost every type is usually present. We have our Greeks and our Scholastics today. Indeed, in many respects, Plato and Aristotle are the most "modern" of all philoso-

phers, certainly more modern than men of the seventeenth century and far more so than the men of the thirteenth. The most striking difference lies in the background of the knowledge against which these great Greeks set forth their ideas, that is, in the materials through which the intellectual elaboration of their philosophies was worked out, not in the form of ideality which is the real essense of their philosophies.

Philosophies, from this point of view, fall into three parts: the first, in which the factual foundations are set forth and in which the rest is more or less implicit; the second, in which the ideal construction is developed and demonstrated as rational; the third, in which the programme for the realization of the desired order of life is laid down. This third part, however, is often left by the philosopher for others to supply. These parts constitute a metaphysics, a practical philosophy, and an applied philosophy. Each has its peculiar difficulties and problems.

The factual foundations of a philosophy are derived from an examination of the results of scientific investigations. The sciences analyze nature and man in terms of identifiable characteristics and systems of relations such that consequences of various collections of factors can be foreseen. But no one science is sufficient for philosophy. Sciences are originally differentiated merely as points of contact with the world from which investigations have started and from which they have often, as yet, not progressed very far. As they grow they tend to run together. When physics and chemistry develop, physical chemistry arises as a common field, and today the biologist, the physicist, the chemist, the geologist, and even the astronomer have many common problems. The logical result should be a single body of knowledge wherein the philosopher might find in the interweavings a sort of cosmic map on which his fundamental conceptions could receive orientation.

The necessary appeal to scientific principles as the background of thinking is the basis of the claim of some philosophers that their work is a critique of scientific principles, that philosophy is the science of sciences, or more poetically, that philosophy is the queen of the sciences. When a particular time has been dazzled by achievements in a single field, as Leibniz's was by mathematical physics, Diderot's by physiology, Bergson's by evolutionary biology, there is danger of a preponderant influence from the field in question. Sound metaphysics must beware of such influences and keep each within its proper perspective, however many new developments and suggestions the specific development in question may call forth.

The introduction of perspective into the collocation of scientific

results may create the impression that philosophy has introduced something new into science. This is an illusion, however, for the factual bearings of scientific discoveries must not become changed. There is no way of getting information from concepts when they are cut loose from the facts they were formulated to interpret. Philosophy can merely suggest ranges of facts to be examined and emphasize aspects of them essential to its purpose. The attempt to abstract concepts from their factual context involves us in the futilities of such dialectic as Herbert Spencer utilized to demonstrate the unknowable. His exposition of contradictions involved in the concepts of space, time, matter, motion, *etc.*, does not show that there is no reality for such concepts to represent, but rather that the form of development these concepts have undergone for scientific purposes is not adequate for the use he makes of them. A return to the basic facts makes his criticisms meaningless. A conception adequate for certain scientific purposes may not be adequate for others.

But, of course, the same man may be both scientist and philosopher. If versed in the methods and experienced in the facts of a science, he may make genuine scientific discoveries, but these are not philosophic discoveries, and they must also be distinguished from the pseudo-scientific discoveries some philosophers have put forward as the result of conceptual analysis and dialectic, discoveries that usually fall before the first attempt to give them empirical verification. Perhaps no less dangerous, in his own field, is the scientist's tendency to lapse into crude philosophizing. Where the philosopher may err by detaching scientific concepts from the facts that are their justification, the scientist may as easily fall into a justification of concepts by hastily accepted philosophic notions. No more flagrant example than the biologist's use of teleology need be cited.

When one has in mind a scientific interpretation of nature and man in their relations to each other the way for the second part of philosophy is prepared. If the foundation has been successfully elaborated there is disclosed a range of potentialities for man in the world he lives in. All these can not be realized, for conflicting lines of development are possible. Certain choices must be made and these choices react on each other so that a nice adjustment is necessary if the result is to be a true mental hygiene and fit the philosopher to face life with greatest courage and vigor.

In the first place there must be formulated some conception of the relation of man to the cosmos and the function he has to fulfil as man. The decision arrived at on this point fixes the type of religious thought that can be accepted, not the form of a dogmatic religion, though the conclusions may be such that such a religion is coherent

with them. It holds the philosopher within the bounds of deism, theism, pantheism, or even atheism, if the result is an apotheosis of universal and necessary law.

When this part of a philosophy is complete, the philosopher's general attitude toward life, the type of things he stands for, becomes clear. If he is not to become a mere Utopian, that is, if his metaphysics has not gotten away from realities, the result should appear as something that it is reasonable for a human being to desire. Fortunately there are groups of men sufficiently alike and in sufficiently similar environments, so that the result will rarely, if ever, be a purely individual achievement. Other men will at least find satisfaction in the same general type of thinking and may constitute a school, though they are never in perfect agreement. At least the types of logic striven for, the conceptions of the good approved, and the ideals of beauty valued will be closely congruous. The status of the second part of a philosophy is always determined by the first part, even though it be through the decision that logic, ethics, and esthetics must be developed on an independent empirical or rational basis, for this decision is itself a part of the metaphysics. In most cases, one may suspect, some moral or religious problem comes first into the philosopher's mind and the first part of his philosophy is developed to clear up problems so forced upon him. The order of exposition may reverse the order of investigation.

This part of philosophy is always idealistic in that it consists in the elaboration and critique of ideals. But it is not a part of the metaphysical idealism of history, for it does not require the effort to show that reality involves ideal strivings in its inner nature. Its ideals are rather practical plans developed on a basis of fact and pointing some condition to be realized that the philosopher, at least, considers desirable. They are not then contrasted with the real as something inherently impossible to attain. Just as the expression, "It is all right in theory but does not work in practise," is absurd because the failure to work means that facts have been misrepresented, overlooked, or contradictorily interpreted, and the theory is not all right; so the inherently unattainable ideal implies a similar abuse of data and is at best an emotionally satisfying picture. An ideal, however, may be of extreme difficulty to attain, may require a considerable number of preliminary tasks to be accomplished, and may represent an achievement beyond the attainment of one lifetime. In such a case it has value because it dictates the tasks to be accomplished now and gives direction to what might otherwise be a purposeless scattering of endeavor. In this sense only the practically unattainable may be accounted a rational goal.

But in defining this part of philosophy as ideal construction, it is not implied that the result must be finalistic. It may easily be an integral part of a metaphysics, based on a study of the natures of men, that the chief value in the attainment of any aim is to make possible revaluations and a new advance toward further attainments the character of which can not even be imagined until the consequences of taking the first steps are realized. Such philosophies are irreconcilably opposed to absolutisms and finalisms. They are genuinely "philosophies with the lids off."

The third part of philosophy is the formulation of a practical plan for the realization of ideals proposed by the speculative constructions of the second part. It is realized most concretely in systems of logic and of "practical" ethics. In connection with social philosophy, and perhaps esthetics, the demand for extensive and detailed information of particular sorts is often a stumbling-block to the philosopher himself if he attempts to work out this phase of his system with completeness and exactitude. All social reforms, however, are somebody's plan for realizing a condition set forth as desirable by a philosophy, and political reconstructions are similar plans. As a consequence of this cooperative authorship, they are frequently to be justified only by an eclectic advocacy of several philosophies. A genuine harmony between social practise and a single philosophy can hardly be attained until Plato's philosopher-king shall arrive, whether he be an individual or a democratic nation reasonably harmonized in its philosophy. There seems, however, from the evolutionary point of view to be something peculiarly precious about the preservation of individualities, even at the price of conflicts, perhaps for the very reason that conflicts occur, and one may be permitted to doubt whether the unified social philosophy would be, in the long run, a thing to be desired.

It must be emphasized that the division of philosophy into three parts is not to be taken ontogenetically. It is not the order in which a philosophy shapes itself in the mind of the philosopher. He is likely to begin with some glimpse of the second part, theoretical construction, to return from this to science to test its plausibility, then, learning unnoted or unknown facts, to modify his construction and play back and forth in this fashion, with occasional excursions into the realm of practise, until the first two parts of his philosophy and some sketch of the third have matured themselves together in his mind. When he is able to put the maturing system to work, even if limited to the scope of his own life, the interplay of parts is greatly augmented, with marked benefit to the whole. Unfortunately, the craving for order and plan are so strong with some men that they

do approximate in creation the formal order of exposition. They are the pedantic minds of history. But even in such cases there is usually a discrepancy between the end and the beginning. The third stage is most likely to actually follow the other two, if it is attained at all, and here again the attempt to find means of realization often reacts upon the ideas that it is intended to realize and results in their modification. Such reactions are beneficial and the lack of them is the source of the frequent uselessness of philosophers, rather than the unwillingness of the public to use them that Plato offers as an explanation of neglect.

Each part of a developed philosophy has its own specific types of error and requires a special type of criticism. With respect to metaphysics there are three frequent sources of error: relevant facts established by science may be overlooked, pseudo-scientific conclusions may be invented to fill undesired gaps in science, and the emotional appeal of some conclusion may lead to a false interpretation, misunderstanding or distortion of undenied scientific facts. Besides these, inconsistent reasoning is a minor factor in the systems of great men. When it occurs, the cause is usually preoccupation with some particular phase of a problem, or a shifting of point of view that has occurred in some long period during which the thought has been maturing, with neglect to make corresponding corrections in the foundations. Much difficulty in philosophic criticism arises from first entering the systems to be criticized by accepting their premises and then trying to burst them asunder by forcing inconsistencies to appear through misrepresentation of the philosopher's words, a procedure justly to be condemned. The most common course is an over-simplification of points of view, as in attempting to reject idealisms, realisms or mysticisms as a class.

It is to be noted, however, that the presence of any or all of these defects does not necessarily brand a philosophy as without value. At worst, it is merely not established, for, as every logician knows, the falsity of the grounds does not establish the falsity of the conclusion, but only destroys the claim to proof. Radical error, particularly of the type of distortion and neglect of fact, greatly increases the probability of failure. But the philosopher is always hungry for new scientific discoveries and if he seizes upon them before they are adequately established, he is abetted by the scientist who is equally prone to hastily assume philosophic worth for his ideas, with as weak comprehension of the real demands of philosophy as the most utopian philosopher can exhibit of those of science.

The second part of a philosophy is really the most elusive. It is easy to make a construction that it is not possible for human beings

to realize, or one that if realized would turn out to be not at all what was intended in its effects. In the first case the result is not a philosophy at all but a mere dream, soothing to the emotions, perhaps, but not unqualifiedly beneficial to the whole man since its unrealizable character will introduce conflicts into the demands of action. Such Utopias may have their place in literature as imaginary compensations for much that is drab in daily life and are harmless if not confused with demands for a practical programme. In the second case the danger lies in bitterness and disillusionment and, at worst, in social confusion and disintegration.

Unintended effects are easily introduced into a philosophy. We are in the habit of speaking of our actions in general terms and come to forget that we are really doing much more than our words imply. A man says he is looking for work, but the really important side of his action may be that he is rendering socially useful energies that might otherwise be turned to harm for himself and others, or he may be protecting his family from starvation or illness, or he may be on the road to some world-revolutionizing discovery. Similarly, a philosopher may believe that he is correcting some of the world's evils when he is really introducing other and greater evils in their place. Fichte or Hegel would hardly have intended the direction of German civilization that was derived from them. Our social philosophies only too often exhibit the consequences visioned by William Morris in the *Dream of John Ball:* "I pondered all these things, and how men fight and lose the battle, and the thing that they fought for comes about in spite of their defeat, and when it comes turns out not to be what they meant, and other men have to fight for what they meant under another name."

The moral is that in the present state of our knowledge no rigid speculative philosophy is possible or desirable. We can make clear some goals probably worthy of attainment, but our speculative philosophy must be rather an outline within which to work than an ultimate system. We can probably never wholly escape this situation, at least not until the scope of our psychological and sociological knowledge is extended vastly beyond the bounds of our present vision, but it is a foolish sloth for fear of present and temporary partial failure to neglect to utilize to the utmost the resources at our command. A perfect ideal construction would have to be based on a full understanding of all the capacities and possible forms of human nature and be so drawn that our many and diversified tendencies should be integrated into coherent, consistent and consequently frictionless characters, adjusted to the conditions of a social and physical environment, moulded, in so far as external facts admit,

to be congenial to it. As man is more plastic than inanimate nature, the brunt of such reconstruction must fall upon him, his social organization, and his capacity to shape nature to greater harmony with his needs.

Given an ideal construction, more or less perfect, and the third part of the philosophic task is set: to translate this into a specific programme of action. In our customs and institutions we see fragments of such philosophies at work. Unfortunately they are only fragments and the result is often confusion and conflict. Thus the consumer seeks to obtain from industrialism services that shall free him from the distracting activities of producing for himself a sufficient variety of goods to satisfy his manifold wants. His aim is liberation for specialization on some task that is congenial to his nature. Although he may not be conscious of it, his action is based on a philosophy that recognizes the importance of individual differences and the utilization of them to transfer to the race, or at least to a selected part of it, that self-sufficiency and completeness that primitive society left to the individual and biological analogy exhibits as characteristic of living organisms. To the workman, especially the unskilled laborer, his livelihood presents the most momentous question. His natural philosophy is that consequent upon the acceptance of the doctrine of the will to live and the struggle for survival, whether it take the form of elimination of the unfit, free competition, or of a banding together of the weak to wage successful war with the strong. The capitalist, on the other hand, transforms the will to live into the will to power. Mere livelihood is assured and the fuller scope of his activities demands domination over others with the imposition of his will and ideas. These three philosophies mean that the consumer seeks fundamentally plentiful supply and low prices; the laborer, high wages; and the capitalist, monopoly. The result is daily manifest in our civilization and expresses itself as class warfare. A comprehensive philosophy should harmonize these differences.

But this is only one problem. Our moral conceptions vacillate between an ideal of individual responsibility and of external regulation of an individual's conduct to force him to a common mould. In education, much vocational training is aimed at fitting men for jobs, that is, adapting them for niches that must be filled in our social organization, yet ideally, we talk about producing leaders who think for themselves, originate, create. In religion we hold to our dogma, extol the humble and praise the unworldly, yet, in practise, the humble are trampled upon, and the unworldly are neglected or merely the objects of a somewhat cynical wit.

Some contemplative minds, at the sight of these irrationalities of living, are tempted to wipe out the disturbing factors rather than to recognize them. Thus a philosophic anarchism is willing to eliminate not only industrialism but practically all social organization whatsoever. Conceptions of morality easily become exchanged for crude ideas of success or dropped entirely under the protection of the Nietzschian "beyond good and evil," with no respect, be it said, to Nietzsche's real meaning. Denials of the worth of religion, in practise if not in words, are too characteristic of our age to require comment. Education has been more successful in maintaining its hold, however its present forms are criticized. It is, perhaps, the one social achievement that no man raises his voice to abolish. Even this, however, is not true of higher education.

One fact remains pertinent: whenever these negative philosophies have had a chance to translate themselves into practise, be it on ever so limited a scale, the weakness of the negation has appeared. Anarchistic association requires voluntary agreements which have to be strengthened by training and social approvals until they approximate the enforcement of laws. Religious negations often end in an Unknowable such as Spencer calls God, to cite Mr. Bradley, because he doesn't know what the Devil else it can be. Rousseau's programme of uncompelled education consents to a sort of suggestive discipline and Nietzsche's verbal denial of morality turns into an advocacy of a more strict morality than the one he denied.

The real need, then, is not for a destruction of human achievements but for a consideration of them from a single point of view under which a greater degree of harmonization of their aims and consequences can be attained by intelligent discrimination. That is, they need to be related to a single philosophic background or metaphysics. Unreflectively, man tends to accept the wants he finds on the surface and it is only when he has had some experience in realizing them that he finds that they are not his true or deepest wants. From many such experiences of failure he comes to turn his reflections upon himself, his world, and the relations in which these stand to each other. Then he may start to accumulate knowledge and to integrate his desires anew. From time to time turned back by new failures, he persistently renews his attempt.

A moment of recognized defect in our life attitudes and in what we have sanctioned by them turns us into metaphysicians, seekers after fundamental principles. Hence the justification of considering a philosophy as an individual achievement functioning as a sort of mental hygiene. It absorbs the energy turned back by conflicts that obstruct our progress and redirects it in a manner to lend life

new energy that may swell the tide of further advance. And this achievement is not merely individual, for unity is after all constituted by the interaction of individuals on each other, and whatsoever adds to their energy and removes unnecessary friction between them contributes to the integration of the whole.

Contemporary American life particularly needs a working philosophy, for it is teeming with proffered means to ends in proportion as the consideration of the value of ends is lacking. The question, what it is really worth while for men to be about, needs far deeper consideration. The evidence is that so few will face it. The compensating activity is in being practical (?), in being too busy to think, even though this attitude is like that of a man nearing a precipice on a toboggan who should count his buttons to avoid the responsibility of steering.

It is then necessary, if a man is going to philosophize successfully, that he should reflect upon scientific knowledge in so far as it bears upon problems imposed by the act of living. At the basis of this act lies the need of orientation with respect to the cosmos in general. This orientation results in such conceptions as mechanism and teleology, and is largely the result of reflection upon the discoveries of the physical sciences. The result is important as defining the scope within which religious and moral ideals may develop fruitfully. From the study of biological conceptions comes the conviction as to the extent to which man must reckon himself an integral part of the cosmic structure and admit his dependence upon it. In psychological knowledge lies the understanding of his specific behavior as man and his potentialities of modification. With this knowledge the scientific background from which philosophy starts, its metaphysical materials, are complete.

The omission of the so-called social sciences from this list does not, however, mean that they are alien to philosophy. Quite the opposite. But these sciences include the results of the operation of human intelligence, desire and emotion among their data, and consequently their very data already incorporate the results of philosophizing. These sciences are no longer a part of a metaphysical foundation of philosophy but materials of its critical development. Human decisions can not affect the existence of the entities with which the laws of physical, biological and psychological sciences concern themselves. They can create or destroy the institutions and customs concerning which social laws may be formulated. We can not abolish atoms, solar systems or chromosomes by any philosophy, but endogomy, exogomy, tariffs, or capital punishment exist, as it were, only on philosophic suffrance. A society has a metaphysics,

however rudimentary, before it becomes the subject matter of science. And this metaphysics goes back to the natural sciences as enumerated above.

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STRICT IMPLICATION—AN EMENDATION

MR. E. L. POST, of the department of mathematics in Columbia University, calls my attention to an error in the development of the system of "Strict Implication," as presented in Chapter V of *A Survey of Symbolic Logic*. The postulate 1.8,

$$(p \dashv q) = (\sim q \dashv \sim p),$$

is equivalent to the pair,

$$2.2 \quad (p \dashv q) \dashv (\sim q \dashv \sim p)$$

$$2.21 \quad (\sim q \dashv \sim p) \dashv (p \dashv q).$$

Of these, 2.21, "If 'q is impossible' implies 'p is impossible,' then p implies q," is false. It is consistent with the other principles assumed, but is incompatible with the intended meaning of the primitive idea "impossibility," and with the distinction of this from the idea of simple falsity.

Mr. Post's example which demonstrates the falsity of 2.21 is not here reproduced, since it involves the use of a diagram and would require considerable explanation. Suffice it to say that it is entirely convincing. His proof that 2.21 leads to the consequence

$$\sim p = -p$$

is as follows:

2.21: $(\sim q \dashv \sim p) \dashv (p \dashv q)$ (1)

1.02: $(p \dashv q) = \sim(p - q)$ (2)

1.02 $\{\sim q/p; \sim p/q\}: \sim q \dashv \sim p = \sim(\sim q - \sim p)$ (3)

(3), (2): (1) $= \sim(\sim q - \sim p) \dashv \sim(p - q)$ (4)

(1) $\{(\sim q - \sim p)/q;\ (p - q)/p\}:$

$$[\sim(\sim q - \sim p) \dashv \sim(p - q)] \dashv [(p - q) \dashv (\sim q - \sim p)] \quad (5)$$

(5): (4) $\dashv p - q \dashv \sim q - \sim p$ (6)

(6) $\{-p/q\}: p - (-p) \dashv (\sim -p)(- \sim p)$ (7)

2.51: (7) $= p\,p \dashv (\sim -p)(- \sim p)$ (8)

2.81: (8) $= p \dashv (\sim -p)(- \sim p)$ (9)

2.1 $\{\sim -p/p; -\sim p/q\} : (\sim -p)(-\sim p) \dashv \sim -p$ (10)

1.6 $\{(\sim -p)(-\sim p)/q; \sim -p/r\} : (9) \times (10) \dashv p \dashv \sim -p$ (11)

(11) $\{-p/p\} : -p \dashv \sim -(-p)$ (12)

2.51: (12) = $-p \dashv \sim p$ (13)

1.7: $\sim p \dashv -p$ (14)

1.06: (13) × (14) = $(\sim p = -p)$Q.E.D.

Since the distinction of "impossibility" from simple falsity is essential to that of "strict" from "material" relations, the presence of this consequence of 2.21 would be to reduce the system to a redundant form of "Material Implication."

To correct this error, postulate 1.8 must be replaced by the principle given as theorem 2.2,

$$(p \dashv q) \dashv (\sim q \dashv \sim p),$$

and theorems 2.7, 2.712, 2.72, 2.731, 2.75, 2.76, and 2.77—all of which are alternative forms of 2.21 or 1.8—must be deleted. The proof of the remaining theorems, with the further exceptions to be mentioned immediately, will not be affected; and the important results and general character of the system will still be as presented in the book.

The transformation set forth in Section III, which proves that Material Implication is a subsystem in Strict Implication, can not be carried out in all details in the manner proposed, since theorems 4.3—4.37 of that section involve 2.21 and are invalid. But this transformation can be otherwise effected, as is demonstrated by the fact that all the symbolic postulates for Material Implication given in *Principia Mathematica* can still be deduced. In the proof of these postulates, as given in Section III, the only use of 2.21 or its consequences is in 4.54 and 4.55, which are lemmas to 4.56, and in 4.57. But 4.56 and 4.57 can be otherwise proved as follows:

Lemma 1. $p \dashv (q \subset p\,q)$

Proof: 2.4: $p\,q \dashv p\,q$ (1)

4.52 (1) = $p \dashv (q \subset p\,q)$

Lemma 2. $(p \dashv q) \subset (p\,r \subset q\,r)$

Proof: Lemma 1: $q \dashv (r \subset q\,r)$ (1)

1.6: $\{(p \dashv q)\,[q \dashv (r \subset q\,r)]\} \dashv [p \dashv (r \subset q\,r)]$ (2)

4.15: $[p \dashv (r \subset q\,r)] \dashv [p \subset (r \subset q\,r)]$ (3)

1.6: $(2) \times (3) \dashv \{(p \dashv q)\,[q \dashv (r \subset q\,r)]\} \dashv [p \subset (r \subset q\,r)]$ (4)

4.52: $(4) = (1) \dashv (p \dashv q) \subset [p \subset (r \subset q\,r)]$ (5)

4.51: $(5) = (p \dashv q) \subset (p r \subset q r)$

Theorem 4.56. $(p \subset q) \subset (p r \subset q r)$

Proof: Lemma 2 $\{(p \subset q)p/q\}$:

$$\{[(p \subset q)p] \dashv q\} \subset \{[(p \subset q)p]r \subset q r\} \quad (1)$$

2.91: $(1) = \{[(p \subset q)p] \dashv q\} \subset \{[(p \subset q)\ (p r)] \subset q r\}$ (2)

4.53: $(2) \times 4.53 \dashv [(p \subset q)\ (p r)] \subset q r$ (3)

4.51: $(3) = (p \subset q) \subset (p r \subset q r)$ Q.E.D.

Theorem 4·57. $(p \subset q) = (-q \subset -p)$

Proof: 2·8, 2·51: $-(p-q) = -[-q-(-p)]$ (1)

1·03: $(1) = [(p \subset q) = (-q \subset -p)]$ Q.E.D.

For similar reasons, postulate L of the set given for the "Calculus of Ordinary Inference" should be

$$\text{L. } (p\,q \dashv r\,s) \dashv (p \circ q \dashv r \circ s).$$

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REVIEWS AND ABSTRACTS OF LITERATURE

Authority in the Modern State. HAROLD J. LASKI. New Haven: Yale University Press. 1919. Pp. 398.

Usually, we do not understand the institutions we take for granted, and unwittingly we obey Burke's admonition and reverence them. Such has been our attitude toward the state. Of late, when our own political philosophers discussed it, they did so nearly always to justify its existing form of organization. When our political scientists dealt with it, they seldom did more than describe and classify its organs of government.

Mr. Laski breaks with this tradition. His view of the state is heretical, although he hides his non-conformity behind an awe-inspiring mass of pointed references and excellent foot-notes. He inquires into the problem of state authority and the nature of obedience. To Mr. Laski the state is the people organized politically. He would say with William Graham Sumner "the state is all of us," but would add, "yet, not all of each of us." There are innumerable human interests which lie outside the purview of the state, which, after all, is no more than one of the innumerable group units of which society is composed. While the state and government are not identical, it is through government that the state functions, and thus, any real-

istic analysis of the modern state will actually be an analysis of government. The doctrine of sovereignty is but a legal fiction, which has, in fact, already broken down. The state is entitled to no loyalty from its members which it has not freely won from them through service. It is the co-equal rather than the superior of the other group units which go to make up society. The individual may be, and he usually is, a member of several groups. Obedience to the state, *viz.*, obedience to the persons who constitute the government, must rest ultimately upon free individual response. In a clash between the state and a non-political group the individual must be left free to choose as to which he will give his adherence. Good citizenship consists in contributing to society the best in one's personality. Yet without freedom this is impossible. The sovereign state, which lays first claim upon the loyalty of citizens, is the denial of freedom. And the claim of unquestioned obedience is most dangerous at the very times when it is most vigorously exerted—at times of crisis—for it deprives the state of free counsel at the hour of its greatest need, and takes from the individual his freedom of choice in a moment of most vital import.

But, this work tries to show, the doctrine of sovereignty has in fact broken down. The state's own civil servants have demanded the right, now freely accorded other workers, to form associations and to strike. In France, and since the author's writing in Great Britain, in Canada and in Massachusetts, civil servants, including even the police, have organized and conducted strikes against the arbitrary power of the state. Their governments have vigorously condemned them, have loudly asserted the doctrine of sovereignty and have finally yielded to their servants' demands.

The present state organization stands counter to the facts of social life. Society has become too complex, interests have grown too varied, for the "knowledge necessary to the parts and of the whole" to be concentrated "at a common center," as Tom Paine thought possible. The "new synthesis" at whose threshold Mr. Laski tells us we stand, will be a federalistic society, functionally as well as territorially. The function of production will be separated as completely as possible from the interest of consumption. Questions of law will continue as at present to be matters for the courts. Here Mr. Laski is far from enlightening. We take it, though, that what he objects to in the state as it is organized to-day is its outgrown legislative and administrative authority trying to perform functions and pretending to exercise powers which under existing conditions are far beyond its competence. To the state as final arbiter Mr. Laski seems to have no objection. He even looks with

favor upon a tribunal of "especial dignity like the Supreme Court of the United States," to settle disputes between conflicting interests and authorities. Yet, he tells us nothing of who is to make the law which the court is to administer, of what authority is to organize the court, and who is to enforce its decree.

Yet, it must be remembered that this book is not a systematic treatise upon the theory of the state. It is rather a series of studies, more or less related, upon what is perhaps the central problem of politics: the nature and limitations of state authority. The author elucidates his own position through an analysis of the theories of French philosophers of the post-revolutionary period. This part of Mr. Laski's work does the double service of helping to clarify his position and of acquainting an English speaking public with the thought of Bonald, Brunetière, Bourget, Lamennais and Royer-Collard.

To those of us who insist upon "solutions," Mr. Laski's volume will be disappointing. He doesn't build a utopia, he studies a problem. The process of government to-day is the process of the adjustment of various group interests. The representative legislature, in fact, promulgates as the law of the state the demands of those groups which are able to exert strong enough pressure upon it. The modern state is the organ of the dominant group in society. Its function, we are told, is to maintain "law and order." To the dominant group "order" is the existing order, and law is an instrument to maintain the *status quo,* rather than a method by which to effect progressive change. "To make the state omnicompetent is to leave it at the mercy of any group that is powerful enough to exploit it, . . . is to make it the creature of those who can possess themselves of its instruments" (p. 385).

Mr. Laski seeks the solution of his problem through the limitation of state authority on the one hand, and the allowing of a great measure of autonomy to social and functional groups on the other. The state will be recognized as one group within society, performing certain specific functions. Its importance, as compared with that of other groups, will be measured by the service it performs, rather than by the dignity which it claims.

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Army Mental Tests: C. S. YOAKUM, and R. M. YERKES. New York: Henry Holt & Co. 1920. Pp. 303.

This book puts into conveniently accessible form the methods for the examination of recruits employed by the Surgeon General's

Office, with their chief results and implications. Its importance to the mental examiner is sufficiently indicated by partial enumeration of its contents. There are reviewed the requisite features of a large-scale group test suitable for military use, also the various checks applied through other criteria of intelligence. The alpha scale is most satisfactory above 11 years, while the beta scale is less satisfactory at the high intelligence levels. The relation of intelligence ratings to occupational specifications is discussed. Among the statistics the reviewer has not seen elsewhere are those showing the proportion of low and high grade men in typical military groups; also the detail of intelligence findings for officers in different branches of the service, and the relation of intelligence to rank. This last is practically zero. The Examiner's Guide is reproduced, and keys for tests are added. The various tests of the army performance scale are closely described, and the important scoring table of Healy's newer picture completion test is included. There are some paragraphs on buildings and equipment. Account follows of tests made in the S. A. T. C. and in colleges. There are quoted statistical tables showing among other things the distribution of alpha scores in various institutions, the incidence of the higher grades in various institutions, military and otherwise; the comparison of men and women, and of different departments of the same institution. There is practically no difference between men and women or between different departments, and but little between different collegiate years. There is liberal quotation from significant articles by Yoakum, by Dodge, and by Yerkes. The Leavenworth Disciplinary Barracks tested about equally with the draft. Conscientious objectors averaged somewhat higher. It would be of interest to know how "sincere" objectors compare with "insincere" ones; the higher average as a whole is not surprising, the objection implying as it does some rationalizing tendency supported by higher "intelligence." In discussing industrial applications, as related to intelligence specifications of different occupations, note is made of a slightly negative correlation observed with one species of manual skill. In conclusion, the forms for the tests and other military records are reproduced.

Theoretical bearings of the material will be obvious, though this book is not intended to develop them. It is an impertinence to praise a volume which focuses the best powers of American psychology upon its subject. One formal suggestion might be offered. A book inviting such frequent reference would be convenient to have in pocket form, something with limp covers and round corners, after the fashion of Davenport's *Statistical Methods*. Royalties of the volume are fitly offered to the advancement of psychology

through the National Research Council. "The degree of practical success in the application of such a measure may well be considered one of the major achievements of the war."

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JOURNALS AND NEW BOOKS

THE PSYCHOLOGICAL CLINIC, December, 1919. *A Demonstration Clinic* (pp. 1–17): By the Staff of the Psychological Clinic, University of Pennsylvania.—Eight cases are described in detail. These cases were demonstrated in the Psychological Clinic of the University of Pennsylvania. The record of the patients includes name, age, whom referred by, cause, school attended, age entered, school history, diagnosis, recommendation, Terman Revision mental age, basal age, and I. Q., physical condition, educational status at time of examination—reading, letters known, arithmetic, number of hours instruction, present status, speech work. *The Meaning of a Binet Score* (pp. 18–26): H. J. HUMPSTONE.—The meaning of the Binet score is a performance level on the intelligence scale. This is one element useful in giving a diagnosis of the child's mental ability. *The Present Status of the Subnormal Class* (pp. 27–32): FRANCIS N. MAXFIELD.—The problem of the mentally defective child until he is sixteen years old is presented. The large part of the social problem after he is sixteen is also given with suggestions for meeting it. *Shell-Shock* (pp. 33–50): T. E. SULLENGER.—The term "shell-shock" has been adopted officially as a diagnostic term to cover all neuroses arising among officers and soldiers of the army. Nine cases are described. Considerable stress is laid on the psychological aspects of the war neurosis. *An Analysis of the Proficiency and Competency of a Fourth Grade Class* (pp. 51–58): GLADYS E. POOLE.—A survey was made of 30 pupils of nine different nationalities. The tests used were: Arithmetic Series B, Monroe Standardized Silent Reading Test, Courtis Standardized Research Test in Reading, Thorndike Visual Vocabulary Scale A–2, Ayres Measuring Scale for Handwriting, Ayres Measuring Scale for Ability in Spelling. Some of these pupils absolutely lacked fourth grade competency. Proficiency tests should be given and the child's proficiency accurately determined before promotion. *Diagnostic Teaching* (pp. 59–65): G. G. IDE.—A very interesting case of a boy with deficient energy is described. *The Classification of Criminals* (pp. 66–74): CARL MURCHISON.—The classification of several hundred criminals according to the Alpha Group Examination was made. *Some Problems at Work*

Age Level (pp. 75–87): G. G. IDE.—The problems of the fourteen year old boy who is mentally deficient are discussed. Six cases are described. *The Training of Very Bright Children* (pp. 88–96): LIGHTNER WITMER.—A very bright child is one who has such a high measure of competency that he is able to learn more than the prescribed curriculum, within the prescribed time, under the prescribed conditions. A farmer does not try to cultivate weeds and grain in the same field. Let us be very optimistic and confidently await the day when education will be as scientifically and intelligently directed as agriculture.

Industrial Administration. A Series of Lectures by A. E. BERRIMAN, ST. GEORGE HEATH, LEONARD HILL, T. B. JOHNSON, A. F. STANLEY KENT, T. M. LEGGE, T. H. PEAR, B. SEEBOHM ROWNTREE. Manchester, Eng.: University Press. New York: Longmans Green & Co. 1920. Pp. 203. $3.

NOTES AND NEWS

THE Board of Governors of the University of Manitoba, Winnipeg, Canada, announce that they will proceed shortly to appoint a professor of philosophy and invite applications for the chair. This is to be the first appointment in the Department of Philosophy and Psychology recently established. The initial salary will be $3,800. The successful applicant will be expected to enter upon his duties on or about September 1, 1920. Five printed or typewritten copies of letter of application and testimonials should be in the hands of the Secretary of the Board of Governors on or before June 20, 1920.

WE borrow from *Science* for May 14, 1920, the following account of the proposed formation of Anglo-American libraries for Central Europe:

"It is proposed to establish in Central Europe under British-American auspices libraries of recent English books indispensable to university teachers. The work is being organized on a broad, non-political, non-sectarian basis, so as to enlist the widest possible co-operation. These libraries will supply on loan books needed by the faculties of the different universities in Central Europe. They will be under the charge of British and American representatives, and committees of the foreign universities will be asked to superintend the local administration. A committee of the six most important learned societies in Germany and Austria has been formed for the carrying out of the plan which, in addition to the loan library, will include a

system of exchange of publications and duplicates between any libraries and institutions willing to cooperate. The preliminary statement of the trustees says:

> "By thus taking the initiative in extending the hand of fellowship to colleagues in former enemy countries, British and American scholars are seizing a timely opportunity of helping to heal the wounds of the war and of exemplifying in a practical and convincing way the true 'international mind.'

"Viscount Bryce, Lord Robert Cecil and other English public men have expressed their approval of the plan and have promised their cooperation in carrying it out. The supporters of the plan in Great Britain include: Gilbert Murray, Oxford; A. E. J. Rawlinson, Oxford; C. S. Sherrington, Oxford; Walter Raleigh, Oxford; A. E. Shipley, Cambridge; J. J. Thomson, Cambridge; A. S. Ramsay, Cambridge; Joseph Larmor, Cambridge; Horace Darwin, Cambridge; W. B. Hardy, M.A., Cambridge; Alfred Hopkinson, Glasgow; Col. E. H. Hills, Woolwich; Henry A. Miers, Oxford; Alex. Hill, Cambridge; George Paish, London; Rickman G. Godlee, London, and Michael Sadler, Leeds.

"University teachers in the United Kingdom and America are requested to give their approval and cooperation to the plan by sending their names to the secretary, Mr. B. M. Headicar, librarian of the London School of Economics (University of London), Clare Market, London, W.C."

DR. CHARLES W. HENDEL, of Williams College, has accepted an appointment as associate professor of philosophy at Princeton. His successor at Williams is to be Dr. T. H. Proctor, now of Harvard.

DR. JAMES R. ANGELL, professor of psychology and dean of the university faculties at the University of Chicago, has been elected president of the Carnegie Corporation of New York. For the past year Professor Angell has been chairman of the National Research Council.